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Supercomputer Spies

Disturbing questions are raised by the government's decision to restrict Soviet-bloc scholars' access to U.S. supercomputers. Academics, concerned with maintaining openness and free exchange on campus, are suspicious of any plan that might result in their having to act as policemen. As one researcher put it, keeping watch on visiting colleagues and blocking sensitive inquiries may be normal behavior in a totalitarian society, but not in a democracy.

Yet defense and intelligence specialists have points on their side, too. U.S. computer technology outpaces the world. The success of unmanned space vehicles provides a few examples: Voyager probes, expected to run down years ago, revolutionized our understanding of conditions on the planet Jupiter, then spectacularly eclipsed those discoveries at Saturn. Reprogramming Voyager 2's computer enabled it to travel on and open a window on Uranus, an enigma since its discovery by William Herschel. U.S. scientists, with no funds for a Halley's probe, reprogrammed an existing satellite to meet Giacobini-Zimmer, recording the first flight through a comet's tail. A five-vessel flotilla is headed for Halley's itself, but a U.S. Pioneer orbiting Venus has already photographed the comet's close solar passage while the Earth was far away. Again, computer reprogramming accomplished a scientific miracle.

Recent reports of espionage in Silicon Valley and other high-tech hotbeds, coupled with the exposure of complicated transshipment schemes to buy top computers, show the Soviets' awareness of the U.S. advantage. Defense aides fear they will try to close the gap by sending military specialists here to use university-based supercomputers, $10-million to $30-million machines that are the only calculators big enough and fast enough to handle complex problems in aerodynamics, weather analysis, cryptography, nuclear physics, biotechnology and other areas.

Plans to prevent such Soviet activity may distress academics, but a practical assessment shows that some restrictions must be tolerated. The 1987 defense research budget is $41.8 billion, some of it for contracts to universities and associated laboratories. In addition, the National Science Foundation has budgeted $1.5 billion for academic research. While in the past academic centers were formerly isolated from the activities of military planners, in the modern era scientific expertise is recognized as an essential element of national defense. The supercomputers being given U.S. research centers under a $200 million NSF program are necessary tools for continued progress, but the scientists, like all who benefit from the advantages of an open society, must accept some responsibility for helping to keep it free.

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